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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/805,588

03/19/2004

Jack B. Andersen

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EXAMINER

SUTHERS, DOUGLAS JOHN

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

02/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,588

Applicant(s)

ANDERSEN ET AL.

Examiner

Douglas Suthers

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 1207.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 8-17, 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Ulrick et al. (US 6498531 B1).

4. Regarding claim 1, Ulrick discloses a system comprising:

a detector configured to detect a clipping condition (over current or over voltage) in an audio signal (sensors of figure 3);

a signal processor coupled to receive a feedback signal from the detector (logic of figure 3);

wherein the signal processor is configured to modify the audio signal in response to the feedback signal received from the detector (turns off amplifier drive, column 8 line 59).

5. Regarding claim 2, Ulrick discloses wherein modification of the audio signal by the signal processor is variable (variable length of time as needed).

6. Regarding claim 3, Ulrick discloses further comprising a noise shaper (power amp figure 1, item 200), wherein the detector is coupled to the noise shaper and configured to detect the clipping condition in the audio signal in the noise shaper.

7. Regarding claim 4, Ulrick discloses wherein the system comprises one or more components of a digital audio amplifier (PWM amplifier 200).

8. Regarding claim 5, Ulrick discloses wherein the signal processor is configured to modify the audio signal by clipping the audio signal (maximum voltage given by reference of figure 3).

9. Regarding claim 8, Ulrick discloses further comprising a filter coupled between the detector and the signal processor, wherein the filter is configured to filter the feedback signal of the detector (column 8 line 66 to column 9 line 3).

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10. Regarding claim 9, Ulrick discloses wherein the clip filter comprises a counter that is incremented for each clock cycle in which the output signal of the clip detector is asserted and that is reset on each clock cycle in which the output signal of the clip detector is not asserted (figure 3, counter in upper right hand corner).

11. Regarding claim 10, Ulrick discloses wherein the clip filter is configured to assert the filtered output signal when the counter reaches a threshold level (set by dip 52).

12. Regarding claim 11, Ulrick discloses further comprising a flag circuit (output of comparator) coupled between the filter and the signal processor, wherein the flag circuit is configured to receive the filtered feedback signal and, if the filtered feedback signal is in an asserted state, to maintain the filtered feedback signal in the asserted state until the flag circuit is reset by the signal processor (maintain "over current" condition until drive signal is in safe condition).

13. Regarding claim 12, Ulrick discloses wherein the clipping condition comprises simple clipping of the audio signal (over voltage).

14. Regarding claims 13-17, and 20-24, method claims 13-17, and 20-24 are rejected in an analogous manner to apparatus claims 1-5, and 8-12.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 6, 7, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrick et al. (US 6498531 B1) in view of Klippel (US 5528695).

17. Regarding claim 6, Ulrick does not expressly disclose the use of compression.

Klippel discloses wherein a signal processor is configured to modify the audio signal by compressing the audio signal (figure 4, via 34).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the compression techniques of Klippel in the protection system of Ulrick. The motivation for doing so would have been to allow continuous audio output without interruption, but still maintain safety. Therefore, it would have been obvious to combine Klippel with Ulrick to obtain the invention as specified in claim 6.

18. Regarding claim 7, Klippel discloses wherein the signal processor is configured to modify the audio signal by compressing only a portion of the audio signal that exceeds a threshold amplitude level (column 6 lines 26-38).

19. Regarding claims 18-19, method claims 18-19 are rejected in an analogous manner to apparatus claims 6-7.

Response to Arguments

20. Applicant's arguments filed 12/12/08 have been fully considered but they are not persuasive.

21. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., applicant's idea of "clipping condition and "noise shapers") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

22. Regarding applicant's arguments regarding claim 1, the examiner is reading the term "a clipping condition" broadly. In this instance, the amplifier is turned off, thus clipping off the audio signal.

23. Regarding applicant's arguments regarding claim 2, inputting an audio signal and outputting only portions of the audio signal is an obvious modification of the signal.

24. Regarding applicant's arguments regarding claim 3, the examiner is reading the term "noise shaper" broadly. In this instance the amplifier would add some noise, and at the very least modify the level.

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25. Regarding applicant's arguments regarding claim 5, the maximum voltage for the audio signal is the rail voltage.
26. Regarding applicant's arguments regarding claim 8, the fact that amplifier is still running provides feedback.
27. Regarding applicant's arguments regarding claims 9 and 10, the counter referred to obviously counts the detected times the current is exceeded in the previous block.
28. Regarding applicant's arguments regarding claim 6, again the examiner is reading the term "clipping condition" broadly. In this case excessive amplitude may cause clipping.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Suthers whose telephone number is (571)272-0563. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

djs



VIVIAN CHIN

SUPERVISORY PATENT EXAMINER